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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/014,855	12/14/2001	Masanori Tateyama	217406US2	1815

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ALEXANDRIA, VA 22314

EXAMINER

JARRETT, RYAN A

ART UNIT	PAPER NUMBER
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2125

DATE MAILED: 03/26/2004

6

Please find below and/or attached an Office communication concerning this application or proceeding.

2

Office Action Summary

Application No.

10/014,855

Applicant(s)

TATEYAMA ET AL.

Examiner

Ryan A. Jarrett

Art Unit

2125

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4.5</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Independent claims 1, 16, and 20 recite that the wafer processing is performed in **order** from the first **identical** processing unit to the n-th **identical** processing unit. However, these claims also recite that the wafers are **simultaneously** processed by **different** types of the processing units. Therefore, it is unclear whether the processing is done sequentially or simultaneously, and it is unclear whether the processing units are identical or different.

Regarding claims 1, 16, and 20, the meaning of the limitation "cycle" is not understood, in part due to the ambiguity noted above with respect to sequential/simultaneous and identical/different. **The differences between "processing period" and "cycle" and "one-cycle time" and "periods in the one cycle" are not clear.**

Regarding claims 1, 2, 5, 8, 16-18 and 20, it is unclear what is meant by "processing substrates one by one in accordance with one-cycle time as the standard time", or controlling "the first transfer section and the processing units so that the processing time required for each processing unit corresponds to the one-cycle time", or

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controlling "the first transfer section and the processing units so that the processing time required for each processing unit corresponds to division of the one-cycle time by an integer", or controlling "the first transfer section and the processing units so that the total of the processing times for the successive 'n' number of processing units equals to one-cycle time x n", etc. These limitations are doubly confusing in light of the fact that the claims have already established that the processing times for the processing units are the periods t_1 to t_n . Therefore, it is unclear whether the substrates are processed according to the periods t_1 to t_n , or according to the one-cycle time. Perhaps the claims should recite that it is the transfer section that is being controlled based on the one-cycle time, and not the actual substrate processing itself.

Regarding claims 1, 16, 17, and 20, it is unclear why the processing periods t_1 to t_n are divided by the number of "m" identical units of the first to n-th processing units. Furthermore, as noted above, it is not clear what "identical processing unit" is referring to in light of the fact that these claims also recite "different types" of processing units.

Regarding claims 1 and 16, it is unclear what the loading/unloading section is connected to and where it is transferring the wafers to and from.

Regarding claim 16, the definition of "one-cycle time" is not provided in the claim.

Regarding claim 16, the definition of "first total transfer time" is not understood since it is not clear what "periods in the one cycle" is referring to, and how this relates to processing "periods t_1 to t_n " or the "one-cycle time" or the "cycle" previously recited.

Regarding claim 16, the definition of "second total transfer time" is not understood, since it is not clear what "periods in the one cycle" is referring to, and how

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this relates to processing "periods t1 to tn" or the "one-cycle time" or the "cycle" previously recited.

Claims 3, 4, 6, 7, 9-15, and 19 depend from claims 1, 16, and 20 and incorporate the same deficiencies.

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 16-19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. It is unclear what part of the specification enables claims 16-19.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. As best understood, claims 1, 2, 8, 11, 13, 14, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by 10-284574 JP (e.g., paragraphs [0005], [0007], [0011], [0012]).

As best understood, claims 1, 2, 8, 11, 13, 14, and 20 are additionally rejected under 35 U.S.C. 102(b) as being anticipated by 7-171478 JP (e.g. paragraphs [0020], [0030], [0031], [0032]).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 3, 4, 6, 7, 9, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over 10-284574 JP (and 7-171478 JP), as applied to claim 1 above. 10-284574 JP (and 7-171478 JP) does not specifically disclose that the processing time required for each processing unit includes a pre-transfer time, a net processing time, a post transfer time, and a plurality of waiting times. However, such a division of time is necessarily implicit in 10-284574 JP and 7-171478 JP.

9. Claims 12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over 10-284574 JP (and 7-171478 JP), as applied to claim 1 above. 10-284574 JP (and 7-171478 JP) does not specifically disclose a thermal processing unit or a second transfer unit for transferring the substrates from one of the processing units to another. These types of devices are well known in the art and it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify 10-284574 JP (and 7-171478 JP) to include these devices due to their well-known and obvious utilities.

Allowable Subject Matter

10. As best understood, Claims 16-19 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

The following is a statement of reasons for the indication of allowable subject matter: The prior art fails to teach or fairly suggest processing substrates one by one within one-cycle time that corresponds to the larger of either a first total transfer time or a second total transfer time, in combination with the remaining features and elements of the claimed invention.

Conclusion

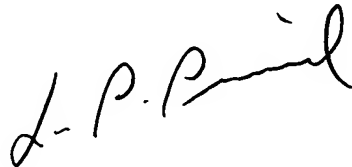
11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan A. Jarrett whose telephone number is (703) 308-4739. The examiner can normally be reached on 10:00-6:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard can be reached on (703) 308-0538. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ryan A. Jarrett
Examiner
Art Unit 2125

3/16/04



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